EXTERMINATORS LOG

MARCH 1936 "Don't Tolerate - Exterminate" VOL. 4, NO. 3

The Public Will Help

Every standard lease form should contain a clause obligating the landlord or owner to keep leased premises free of insects and other vermin.

No dwelling, apartment or business establishment can be considered fit for human habitation if it is infested with rats or insect pests.

The wise owner will welcome such a clause because it gives advance notice that his property is kept clean. It would surely enhance the rentability of property.

Exterminators should get behind the movement and use every effort to sell the idea to all real estate clients.

The Public will help you put it over.

■

JOHN POWELL & CO., Inc.

Specialists in Pyrethrum and Rotenone Products

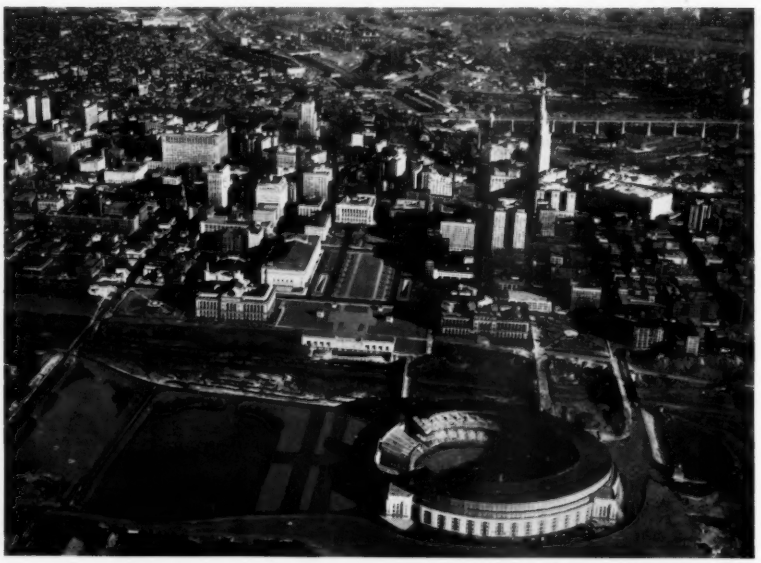
114 E. 32nd St. **New York, N. Y.**

MOUTHPIECE OF THE EXTERMINATING AND FUMIGATING INDUSTRY OF AMERICA

Cleveland – The Convention City

OCTOBER 26-27-28

A few of its beautiful scenes



Air View Showing the Stadium

Museum of Art

Playhouse Square

EXTERMINATORS LOG

A Magazine Devoted to a Cause to Which Mankind Is Indebted

Al Cossetta, Manager and Editor | J. W. Smith, Associate Editor

Cooperating With the National Association of Exterminators and Fumigators, Inc.

Vol. 4 | MARCH, 1936 | No. 3

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CONTENTS

Editorial 4-5

Additional Patents Relating to Pest Control 6
By Dr. R. C. Roark

Housing Area Sanitary Now—Rats Died Like Rats 6

Calcium Cyanide Dust in Ship Fumigation 7
By Dr. C. L. Williams

Questions and Answers 8

The California State Convention 16

Local Organization News 17

Picked Up From Here and There 18

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Editorial

Resolution on Mr. Harper's Death

THE BOARD OF DIRECTORS OF THE NATIONAL ASSOCIATION OF EXTERMINATORS AND FUMIGATORS

through sincere and extraordinary meeting held by correspondence, in expression of its profound sorrow over the death on December 3, 1935, of

FRANK W. HARPER

one of the charter members of and director of the National Association of Exterminators and Fumigators adopted the following resolution:

Whereas, in the death of Frank W. Harper, the National Association of Exterminators and Fumigators and the Industry at large has lost a courteous gentleman, beloved by his fellows as one who unselfishly gave freely of his thoughts and labor for the welfare of the industry, and as one respected by all in the industry, and admitted as one who was successful, now, therefore, in recognition of our esteem and memory of him, our beloved associate and friend *Be It Resolved* by the Board of Directors of the National Association of Exterminators and Fumigators that this resolution be spread upon the records of the Association, and a copy read before the California State Convention at Fresno, Calif., February 8, 1936, and a copy printed in the Exterminators Log and another copy be sent to his devoted and bereaved wife and children who survive him.

C. NORMAN DOLD,
President.

WILLIAM O. BUETTNER,
Secretary.

Our Profession and the Public

WHAT we as a profession, have chiefly to consider is how to so instruct the public in matters of extermination work that they will be able to discern reliable and responsible firms in their work. To achieve this objective and become a power that can and will demand its own rights in matters of extermination, requires that the members of the Association become actively identified in all your local organizations.

There are social and civic organizations in which members could make known our purpose and importance of our profession, and also give educational matter to the public. If such material on extermination problems were given, emphasizing the health and cleanliness importance, it wouldn't be long before the public would become extermination conscious.

The time has come when members of the industry must speak more about the vital importance of maintaining public health and the necessity of realizing the immeasurable importance of our profession in preventing and eliminating sickness, disease and destruction of property. Education for the public relative to using extermination service for maintenance of public health needs to be so organized that we can hereafter be spared much of the honest but fruitless efforts of the past.

The majority of the public pay but very little attention to any of the advertising, unless it is very attractive and tells the story to the point. Again let us emphasize the importance of attracting the public's attention with such advertising material that presents the story and purpose of our profession. Let us go on record this year by letting the public know that a greater extermination profession awaits their command.

Materials, Methods and Standards

A COMMITTEE which bears the title of "Materials, Methods and Standards" should prove to be of invaluable assistance to the members of the National Association of Exterminators and Fumigators and in turn benefit the entire industry. It is hardly necessary to mention that many concoctions are advertised and statements frequently made which do more hard than good. The three-fold function of this committee is obvious.

On **Materials** it is the plan to keep a record of the most effective materials used. The investigation of all advertised concoctions will substantiate or reject the claims made concerning these products.

On **Methods.** The manufacturers of cyanides and other fumigants have paved the way probably in better manner than those supplying the industry with other products for other vermin and pest conditions. The business of the committee will be to unify some of the methods and thus inform the membership of the methods found to be practical.

On **Standards.** The plan is to set up various tables, charts and accumulated data so as to be of assistance in service operations, thus encouraging a standardization or uniformity of our general operations.

The public has too long been confused with conflicting statements and claims made. This is especially true in the termite field where it is almost felt to have become a "racket" if one were to take literally the over-emphasis placed on the part of some firms anxious to secure business. In this connection we would like to emphasize that our industry is not entirely to blame for much of this publicity and "scare" provided for public reading. As a matter of fact, our industry has too long been made the "goat" and from now on there will be an aggressive program to provide the industry with additional information so that publications will feel inclined to suggest to their readers that our industry is best equipped to meet vermin and pest troubles.

Chicago Fumigators' Examinations

The Chicago Board of Health has recently issued an invitation to individuals who wish to have licenses to conduct fumigations in Chicago, using hydrocyanic acid gas, to file immediately applications for examination with the Board of Health. No charge is made for the examination.

Inasmuch as several months will elapse before another examination is held, it is suggested that all those contemplating engaging in fumigation take advantage of this opportunity to qualify for licenses.

More About Rats

THERE appeared in the Oklahoma Times, of Oklahoma City, Oklahoma, the following:

WHY NOT A PROJECT AGAINST RATS?

Almost every project for the relief of the unemployed places a burden on other citizens. Very few of them return a benefit equal to their cost.

Why not undertake a new one that would provide immediate and useful employment and save the country two dollars for every dollar spent?

Fair enough, you will say, if true; but what project could return such a profit? The answer is rats.

Common rats are one of our most expensive luxuries. Government men who study them estimate that each one costs the country something over $2.25 a year. And their number is equal to the number of people—if not greater.

Rats are little noticed by the ordinary citizen, for they usually do their foraging in secret places and at night. But every citizen is injured by them and constantly endangered by them.

Doctor Lautz of the U. S. Department of Agriculture, says that rats destroy cultivated grain as seed, as sprouts and after ripening.

They eat corn, during growth and in the crib, and have been know to eat half the crop. One rat will eat 50 pounds a year.

They destroy merchandise, books, leather, harness, gloves, cloth, fruit, vegetables, peanuts and flour.

They kill more poultry than any other pest, and destroy wild ducks, game birds and song birds.

They damage buildings and drains and cause countless fires.

And they have been known to gnaw the ears and noses of sleeping infants.

Doctor Zinsser says they carry plague, typhus, ratbite fever, infectious jaundice, possibly trench fever and foot-and-mouth disease and a form of horse "flu."

All of that being true, why not get rid of them?

If the government would offer a bounty of $1 for each dead rat, jobless men would clean them out within a year. A smaller bounty would make rat-catching a sport for boys; at $1 a head, determined men would exterminate the species—as worthier game has been exterminated for less reason.

The cost might be $12,000,000. But in what other way could an equal investment save the country $270,000,000 a year?

ROBERT QUILLEN.

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We are agreed that it is a splendid thing to have the public become conscious of the dangers of rats and all that follows with any infestation of rats. We are agreed that no community should tolerate rat infestations. We might even agree that it might be a good idea to pay a reward of $1.00 per dead rat; that is, our agreement on that score is probably that it will cost the taxpayer less on that basis than if a rat campaign is conducted along the lines we have heard about.

For reasons many times stated in recent issues of The Log, we take the position that our industry should be given this work by contract because the average unemployed person is not sufficiently experienced in handling the substances necessary for this type of work. Many of the unemployed can be used for certain operations if there is the direct supervision at all times of men who have made this work a profession.

We have seen the instructions issued to unemployed when compaigns of this nature were conducted. We have also seen the harm it has done to our industry as these men attempted to do work for which they were not suited or for which there was not sufficient training to do the work.

Some half hundred newspaper clippings are before us as we think of this subject. Many of these clippings refer to campaigns that are contemplated and undoubtedly many of these campaigns have never taken place because investigation showed that there would be too much dispute as to the proper conduct of such campaign if all factors were to be given proper consideration.

Our industry can and will cope with any campaign that is needed and welcomes the opportunity of being of service to any community. There have been times, however, when such campaigns seemed to disregard the industry entirely and have even gone forward so as to bring about cancellations for regular monthly services that were being rendered by firms of our industry. At this particular writing, there are two cities confronted with such campaigns that are meaning the loss of business.

The National Association of Exterminators and Fumigators has recently sent a communication to the members and with permission, we print a portion of the Communication. We quote from a recent letter from the Project Control Division of WPA: "These projects are accepted *only* at the recommendation of responsible local interests and every precaution is taken to avoid any possibilities of competition with local exterminators. However, it is obvious that such questions can be determined only by local authorities. I would suggest you contact your State Works Progress Administrator in any instance where you believe that a project proposed for any locality within his jurisdiction conflicts in any way with private interests."

We are certain that the National Association will cooperate with any city confronted with such problems and has information which will be of value.

Convention Progress

THE plans for the next National Convention to be held in Cleveland, Ohio, at the Hotel Statler on October 26, 27, 28, 1936, are going forward very nicely in spite of a cold winter. H. K. Steckel met with the members of the Cleveland local committee at the Hotel Statler in Cleveland on January 31 to discuss tentative plans covering local arrangements and to study the hotel layout. Messrs. Laing, McKenna, Akers, Kirshner and Peterson have made progress since their appointment last fall and all may be assured that they have left nothing undone that will stand in the way of this year's Convention being the best so far. Mrs. (Pat) Laing has her mind and heart full of novel and entertaining plans for the Ladies. We should surely advise all wives, sisters and girl friends to put this date down while it is still early.

The National Committee has submitted one set of recommendations to the Chairman which is now being oriented for a final approval of the committee as a whole. Speakers of national prominence will address you and clinics covering important phases of your work with well known leaders from the industry as well as technical men to conduct them will be held during the sessions. Educational exhibits by manufacturers and supply houses will be there in greater numbers than ever before. These exhibits will include materials and equipment used in all phases of exterminating and fumigating work. Cleveland is preparing now that we may all profit next October.

Additional Patents Relating to Pest Control

By DR. R. C. ROARK

EDITOR'S NOTE: *This service is provided through the Department of Agriculture for the purpose of bringing to the attention of those interested such matters that may be of assistance to the industry. The Department of Agriculture assumes no responsibility for the merits or workableness of any of the patents, nor does it recommend any of the inventions mentioned. Copies of all patents can be obtained for 10c (no postage stamps) sent to the Patent Office, Washington, D. C. When placing orders be sure to note the number of the patent, the date, the name of the patentee and the subject of the invention.*

2,022,937 (Dec. 3, 1935; appl. Feb. 6, 1935). TREE BAND. Willis B. Kirkpatrick, Scarsdale, N. Y.—A tree band comprises an elastic core enclosed by metallic wool and impregnated with viscous insect holding material.

2,022,941 (Dec. 3, 1935; appl. Aug. 26, 1931). MOTH BAG. George Rottman, New York, N. Y.—This moth bag is of the box type.

2,023,160 (Dec. 3, 1935; appl. March 14, 1934). ALKYL CHLORO-DIOXY-BENZOLS. William E. Austin, New York, N. Y. —The patentee claims alkyl derivatives of chloro-dioxy-benzols having the general formula C6H2C1(OH)2CR1R2R3 where R1, R2, R3 are alkyls, either straight-chained or branched, and the OH groups being either in ortho, in meta, or in para position to each other. An example is tertiary butyl chloro-resorcinol. These compounds possess especial germicidal and antiseptic activity coupled with relatively low toxicity.

2,023,209 (Dec. 3, 1935; appl. Nov. 28, 1933). FLY SWATTER. Stephen A. P. Platt, Decatur, Ill.—U. S. Manufacturing Corporation, Decatur, Ill.

2,023,402 (Dec. 10, 1935; appl. Jan. 12, 1935). PORTABLE VAPORIZING APPARATUS. Edwin Brown, New York, N. Y.—This apparatus slowly volatilizes a medicament.

2,023,427 (Dec. 10, 1935; appl. 21, 1934). ANIMAL TRAP. William T. Sept. Laughlin, Oklahoma City, Okla.—This trap is adapted to capture animals alive.

2,024,027 (Dec. 10, 1935; appl. April 10, 1931). FUMIGANT. Richard T. Cotton and Harry D. Young, Washington, D. C.—U. S. government and people of the U. S. — A solid composition of matter, useful as a fumigant, is composed of carbon dioxide and ethylene oxide, the proportion of etheylene oxide to carbon dioxide being about 1 to 9 by weight.

2,024,098 (Dec. 10, 1935; appl. May 31, 1929). INSECTICIDE. Leon C. Heckert, Bristol, Pa.—Rohm & Haas Co., Philadelphia, Pa.—A process of exterminating insects comprises treating them with a substance selected from the group consisting of thiocyanotoluidine, thiocyanoanisidine, p-thiocyanophenyl morpholine, p-thiocyano-benzol aniline, 2-4-dinitrothiocyano benzene, thiocyanoacetophenone, p-thiocyanodi-methyl aniline, phenylthiocyanate and thiocyanate-alpha-naphthylamine.

2,024,337 (Dec. 17, 1935; appl. Jan. 30, 1935). ANIMAL TRAP. Nat Chamberlin, Butte, Mont.

2,024,392 (Dec. 17, 1935; appl. Dec. 12, 1933; in Germany Nov. 13, 1931). INSECTICIDAL PREPARATION. Herbert Schotte and Karl Gornitz, Berlin, Germany.—Schering-Kahlbaum, A. G., Berlin, Germany.—An insecticidal preparation consists of a mixture containing rotenone and veratrin. It was found that by combining one of these drugs containing rotenone with a drug containing veratrin, C37H53O11N, for instance sabadilla seed or an extract or alkaloids recovered from such products, an insecticidal effect is obtained, which is far greater than the effects exerted by the two drugs if used singly. A ground mixture of 2.5 parts radix derridis ellipticae, 7.5 parts semen sabadillae and 90 parts talcum proved useful in exterminating grasshoppers (for instance **Tachycines asynamorus**), flea beetles, bugs **(Lygus campestris)** and many kinds of caterpillars.

2,024,895 (Dec. 17, 1935; appl. May 27, 1931). POULTRY LICE EXTERMINATOR. Arthur H. Teigen, Madison, Wis. — Pratt Food Company.—An insecticide for use on poultry perches, is a non-volatile, sticky, adherent fluid containing 5 per cent free nicotine and 95 per cent corn oil.

2,024,938 (Dec. 17, 1935; appl. Jan. 6, 1934). SPRAYING APPARATUS. John S. Marshall, La Junta, Colo.—This weed exterminating apparatus, employs a combination of chemicals, water and steam or, selectively, any one or two of these, for spraying upon vegetation for the purpose of killing such vegetation.

2,025,365 (Dec. 24, 1935; appl. July 27, 1934). INSECTICIDAL AND FUNGICIDAL AGENT AND METHOD. James W. Van Meter, Los Angeles, Calif.—One-half to G. E. Fetters, Los Angeles, Calif.—A process of preparing an insecticidal and fungicidal solution comprises inducing a high temperature reaction between elemental sulphur and elemental antimony, while said reactants are contained in a container which is immersed in a body of absorbing liquid. The violent reactions induced give rise to products which are absorbed in the enclosing liquid, thus forming a solution of marked insecticidal and fungicidal properties. To the solution obtained as above described, may be added nicotine, nicotine sulphate, oils, aniline, aniline products and other substances having insecticidal and/or fungicidal properties.

2,026,393 (Dec. 31, 1935; appl. June 15, 1933). ANT TRAP. Otto E. Linck, Upper Montclair, N. J.—This ant trap has a combination bait for sweet-eating ants and grease-eating ants.

Housing Area Sanitary Now—Rats Died Like Rats

Last of Exterminators Moves Out, Leaving 100,000 Dead Behind Him

TODAY the last of the 16 modern rat killers (they prefer to be called exterminators) leaves the Lauderdale Courts housing area. Their chief, Louis Kotler, manager of the Orkin Exterminating Co., Inc., estimates that about 100,000 rats who formerly lived in the better housing area are no more.

Mr. Kotler's firm has the government contract for killing the rodents. This work is being done in preparation for building modern, low-cost apartments, and Uncle Sam doesn't want rats in the new homes.

You see, rats leave buildings that are demolished and would go hopping over town to other quarters if they were not killed.

"First we investigated the premises and looked for cracks, holes and nests in each of the 377 units in the 25-acre area. That included 170 houses," Mr. Kotler says. "We had to keep just ahead of the wreckers so the rats wouldn't leave before we had a chance to do our work."

Tanks of Cyanide

Mr. Kotler's men use hand pumped tanks, four feet tall. The tanks are much like those used for garden spraying. Each of these tanks holds two pounds of calcium cyanide.

"Calcium cyanide," Mr. Kotler, who is a chemist, explans, 'is a powder that becomes a gas when exposed to air. Hydrocyanic gas is formed and that does the work."

The rodent exterminators (the term they like best) look for such clews as smudges around holes, hair around entrances or any traces that show where a rat nest is. Those are the holes they pump the gas into.

As the hole is damp, that makes the gas more dense. The stream of gas makes the rats burrow deeper but they can't escape. That's why the rat men like to work on a humid day—there is more moisture in the air and the gas works quicker. It takes about five seconds for the gas to begin work. Then the rats die in their holes.

No Escape

If any rats are near the entrance they seek light and air. But they topple over dead within a few seconds as the gas works that quickly.

The cyanide draws out the moisture content of the body and dries up the carcass. It also acts as a fumigant.

Mr. Kotler, taking his estimate of 100,000 rats in the area, figures there were about 100 rats per inhabitant.

That's why the rats had to be killed—a health measure primarily. Rats, he says, carry typhus, the itch, bubonic plague, scarlet fever, diphtheria and lice. They are also a fire menace as they make nests of combustible materials and nibble matches.

The rat clearance took 22 days.

Calcium Cyanide Dust in Ship Fumigation

By DR. C. L. WILLIAMS
Senior Surgeon, United States Public Health Service

EDITOR'S NOTE: *Through Courtesy of Public Health Reports issued weekly by the United States Public Health Service we are pleased to reprint the following article that appeared February 7, 1936, Volume 51, Number 6. While no reference is made to the use of Calcium Cyanide for destroying rats and mice in mills, warehouses, private property and runways in the ground, the editors feel that many of the industry might desire to have the comments as made for reference in connection with the type of work just mentioned.*

AMONG the procedures introduced of late years as improvements in ship fumigation, one of the most important has been the direct injection of fumigating gases into rat harborages as a preliminary step to general gassing of the whole ship. By this procedure the fumigant is directly introduced into the spaces where the rats seek protection instead of depending on slow, haphazard, and unreliable penetration and diffusion.

It would appear that an improvement of this type would be generally taken up at once, but such has not been the case. As a matter of fact, it can hardly be said to have been taken up at all, the use of such procedure in the United States at the present time being restricted to two or three quarantine stations.

The reason for this is really not far to seek. Quarantine officers in general appear not to be prone to adopt readily procedures that represent additional work and hazard; obviously, direct injection of rat harborages is of this type. However, all quarantine officers cannot be held at fault; at some stations the apparatus and specially trained personnel required cannot be reasonably maintained, and it must be admitted that in utilizing liquid HCN as an injection material the method is somewhat laborious and adds distinct hazards.

Attempting to view human nature as it is and not as he would like it to be, the writer has endeavored during the past two years to develop simplified and safer methods of directly injecting hydrocyanic acid gas into rat harborages, with the hope that thereby a procedure might be developed so simple and relatively safe that its adoption at all major quarantine stations could reasonably be insisted upon. The use of calcium cyanide dust is offered as such a method.

Method of Procedure

As a matter of fact, direct injection of rat harborages with calcium cyanide dust is simplicity itself. The dust is taken from a tightly covered can, in which it is marketed, by dipping it up with a large spoon or small cup. It is poured into the container of a foot-pump type of duster, this container then being screwed in place. The rubber hose extending from the duster (fitted with a nozzle if desired) is inserted into small openings into harborages by a fumigator while another operates the pump, usually 2 to 4 strokes in each harborage being sufficient. If the enclosed spaces to be treated are few or of limited extent, the whole operation might be carried on, even in the hold of a ship, without the wearing of gas masks by the fumigators. If, however, many harborages are to be treated or they are extensive, gas-mask protection is necessary.

Calcium Cyanide

The material used, calcium cyanide (the formula of which is $Ca(CN)_2$), is manufactured in this country in the process of manufacturing cyanamide for use as a fertilizer. So far as this writer is aware, it is at present manufactured in the United States only by the American Cyanamid & Chemical Corporation, under the trade name Cyanogas. It is also manufactured in Germany, the German product being sold in this country under the trade name Calcyanide.

Cyanogas is obtainable in flakes, granules, or as a dust, the latter being quite fine, most of the particles passing a 200-mesh screen. Calcyanide is at present obtainable only as a fine dust, although it is available abroad in the form of briquets, which are usually broken into a dust for use. Cyanogas is blue in color, while Calcyanide is a light brown. Cyanogas contains from 40 to 50 per cent calcium cyanide, while Calcyanide contains from 80 to 85 per cent calcium cyanide. This is an important point to remember, since in interchanging these materials the Calcyanide must be used in approximately half the amounts of Cyanogas. For use in the foot-pump duster, the form of Cyanogas to be specified is the "A" dust.

The action of calcium cyanide is based upon the fact that it takes up moisture from the air to form hydrocyanic acid and calcium hydroxide; the former is liberated as a gas. The thinner the layer exposed to the air, the more rapid is the reaction. When a duster is used, the dust is blown out as a cloud and the reaction with the moisture of the air is almost immediate, continuing up to the point where the moisture present is exhausted. This limiting point is not reached when calcium cyanide is used, as described herein, for ship fumigation. The amount of HCN produced is approximately one-half the weight of the calcium cyanide entering into the reaction. Therefore, when Cyanogas is used, the HCN produced will be between one-fifth and one-fourth of the weight of the raw material. When Calcyanide is used, it will be approximately two-fifths of the weight of the raw material.

The reaction between water and calcium cyanide is reversible, that is, the calcium hydroxide in the presence of hydrocyanic acid takes up this material to produce calcium cyanide and water. This is of some importance where large amounts of calcium cyanide are used and it is spread in relatively thick layers. Where the material is dusted widely in relatively small amounts, however, the amount of HCN that will be retained in the residue is not likely to be dangerous.

Foot-Pump Duster

The foot-pump duster that has been used in experiments with Cyanogas and Calcyanide is one supplied commercially by the American Cyanamid & Chemical Corporation and is built for the purpose of dusting their Cyanogas "A" dust. This duster operates equally well, however, with Calcyanide. The device consists of an air pump attached to a stirrup at the bottom; one foot is placed in the stirrup to hold the apparatus steady while pumping. The stirrup is tall enough to accommodate a one pint glass Mason jar or a similar jar made of aluminum, which is preferable. The jar screws into a fitting on the bottom of the pump. Air from the pump passes into the jar through a check valve and out of the jar through a delivery hose. On the down stroke, about one-fifth cubic foot of air is blown at high velocity through a small opening into the container, where it stirs up the dust and carries a portion of it out through the delivery tube. Approximately 1/12-ounce of the dust is delivered at each stroke.[1]

Dosage

The vast majority of rat harborages are either of small capacity or are subdivided into small spaces. When subdivided, of course, each subdivision must be separately injected. As a rule, a harborage or a subdivision will not be of more than 10 cubic feet capacity, and often is of not more than 2 or 3 cubic feet capacity. Since the foot-pump duster delivers about 1/12-ounce of the dust per stroke, the Cyanogas "A" dust delivered by a single stroke will, in a pipe casing of, say, 4 cubic feet capacity, produce a theoretical HCN concentration of about 3½ ounces per 1,000 cubic feet. If Calcyanide is used, the concentration will be about 7½ ounces per 1,000 cubic feet. Two strokes, of course, will produce approximately twice these concentrations in such a space.

In experimental work with pipe casings, it was found by titration of the HCN present that the theoretical figures cited were not actually attained, probably because of absorption of gas and leakage. Furthermore, in considering this problem one must bear in mind that, in practice, leakage will be considerable and that the concentration will rapidly fall unless the harborage injected is of very tight construction.

In actual practice on ships, a number of different dosages were utilized; but it was found that, for the majority of harborages not in excess of 10 cubic feet capacity, four strokes of the pump when Cyanogas was used, or two strokes of the pump when Calcyanide was used, gave excellent results in rat destruction.

Safety

In distributing calcium cyanide dust with a foot-pump duster as described, the hazard to the operators is low. This is due principally to the fact that while high concentrations of HCN are produced in the constricted harborages, the actual amounts of dust liberated are so small that concentrations in the open ship's hold remain quite low. So far as the apparatus is concerned, the only hazard of any material importance is the possibility that the dust container may become loosened and drop off just as the pump is operated. This would cause a blast of dust to fly up in the face of the operator. Danger from such an accident

(Continued on page 14)

[1]Recently this duster has been improved by attaching a by-pass valve, permitting air alone to be pumped through the hose, so that a charge of dust may thereby be widely distributed. A duster with a 2-quart dust jar is obtainable.

Questions and Answers

MANY have expressed their appreciation to the National Association of Exterminators and Fumigators and to The Log for the publication of the Discussional Period that followed the principal addresses at the Detroit convention. We are pleased to include in this issue the questions and answers, as well as general comments following the address of Dr. Thos. E. Snyder, Senior Entomologist, Forest Insect Investigations of the Bureau of Entomology of the United States Department of Agriculture, and Dr. Alfred Weed, entomologist of John Powell & Company. Mr. Conrad C. Johnson of Innis, Speiden & Co. also answered questions directly after the address on "Chloropicren and the Modern Fumigator."

Dr. Alfred Weed

Question: From tests you mention you feel pyrethrum is effective. You have found that it isn't worth a rip against bed bugs, is that correct?

Dr. Weed: Not unless you thoroughly wet them.

Question: I would like to know what effect pyrethrum powder has on centipedes.

Dr. Weed: I don't have an answer for that.

Question: What effect pyrethrum powder has on centipedes.

Answer by Mr. Eldredge: I believe the Government bulletin says it will kill centipedes.

Comment by Member: I sent to the Government and they said to use a fly swatter.

Question: We are interested in the grinding of pyrethrum. How fine can it be ground?

Dr. Weed: I don't know. That is probably a question of dryness and toughness of the flowers themselves. Of course it is no problem when you have a duster, either a rotary duster or a bellus duster. I would like to hear some debate.

Question: A number of years ago I know of an old mill being used, eighty-pound balls and forty-pound balls, and one of the chief problems was the ball-up of the powder; the hopper was too high. That caused the powder to become very, very dry before it went over the top of the hopper and as you blow into the hopper, of course, the powder came out quicker. They had it ground up too fine and it lost its toxicity. That is the only place I have known where the powder was ground exceptionally fine. Do you know of any such case where it is ground nearly as fine as that?

Dr. Weed: I don't know what degree of fineness that is. We ground some stuff on special order. It was put through about 180 mesh. You can't get 100 per cent of it to go through 180 mesh in the laboratory. You can screen it.

Question: Is that powder tested after it is ground?

Dr. Weed: Yes. Our powder, of course, is regularly ground to 100 mesh, except where for special calls we have run it finer. It has been our experience that it loses somewhere between 3/100 to 5/100 per cent in milling, depending upon the degree of fineness to which it is ground, and with coarsely ground material, such as that used in the manufacture of fly sprays from 1/100 to 2/100 per cent would seemingly cover the loss in strength in the milling.

Question: Doctor, I would like to ask you how long does it take for pyrethrum powder that is used for dusting purposes, how long it would take that powder to deteriorate to the extent of losing its toxicity, and if it is affected by dampness?

Dr. Weed: After it is sprayed out?

Question Reply: Yes.

And Another Question: How long do you think pyrethrum would retain its toxicity where it is hot and practically no sun light?

Dr. Weed: I would say that entirely depends on where you sprayed it. As far as stability of powder is concerned, we have had samples scattered on the benches that are practically inert in three days. However, in boxes, in the same position, the material spread to a depth of about ½ inch and turned over daily, still possessed some toxic value at the end of 30 days. It is our experience that our finely ground material, in our own type of containers, will lose from about 10% to 15% of its active principle content in a 12 month period.

Question: How long would pyrethrum, say 200 mesh, last in a pasteboard container?

Dr. Weed: I have no records on 200 mesh, but I have records on 100 mesh, fibre cardboard containers, and those usually lose between ten and fifteen per cent in twelve months, just closed, not sealed.

Question: Doctor, recently I was cautioned by a manufacturer not to carry made up fly spray. It was said pyrethrum extract would much more quickly lose its effectiveness with an odorless base than paraffin.

Dr. Weed: It has been our experience that when the correct type of containers have been used for Pyrethrum fly sprays, the highly refined oils are just as satisfactory as are the ordinary kerosenes. If, however, some of these factors which we know will bring about a loss in strength are present, and I am referring to sunlight, strong acids, water, flux and glaze used in can manufacture, alkalies or certain metals, then the destructive effects of these materials appear to be more rapid where the deodorized oils are used than where ordinary kerosene is the vehicle. It might be argued that there is something in ordinary kerosene that gives the active principles of Pyrethrum some protection, or there may be something in the deodorized kerosenes that may activate a deteriorating effect upon these materials.

Question: As you and I agreed on previously, pyrethrum fly spray is no good for bed bugs. Why is it the makers of these vaporizing machines advertise their machines as effective for bed bugs when used with pyrethrum concentrate?

Dr. Weed: I suppose every business is divided into two or three outfits, you have the selling outfit, the office detail and plant and you have the laboratory or something of that kind. We are in the same boat, so probably some of the sales boys thought it was the same thing. When Mr. Burgess came out with the first unit, we got one, and we wrote to the Sinclair Refining Company, who were the only people that I knew of that were rearing bed bugs. (Laughter.) They kindly sent us two or three glass tubes, which they fed the day before they shipped them, and in the course of twenty-four or forty-eight hours we had fifty or one hundred bugs in these tubes down in the laboratory. So, we took a concentrate, eight pounds of pyrethrum per gallon, and we put it into our chamber with one of those vaporizers. We put the bed bugs, some of them in beakers, and set them on the bottom and others we put in glass cylinders with a piece of cheese cloth over the end, because it had been said the vapors coming out of one of those units will penetrate anything, it doesn't matter what it is. Well, we killed four out of every ten bed bugs where they were in the beakers, where they couldn't get away. In the glass cylinders we killed one in ten, and that was, I would say, at least one of the types of concentrate that has been sold that was used in these vaporizing units. As far as we are concerned, we can do a very nice job with those units for flys and mosquitoes. I don't know what the experience has been with you folks, but when it comes to clothes moths, we find the same thing with clothes moths, and clothes moth larva, and for some reason we couldn't get that ethereal pyrethrum to penetrate. (Laughter.)

Question: Every time we deliver pyrethrum spray to a firm, this firm also purchases a drum of carbon tetrachloride and has mixed it half and half. What effect does that have on the actual spray?

Dr. Weed: Of course he is cutting down the amount of pyrethrum extract by half, and as far as carbon tetrachloride in fly spray, I don't see what effect it has. It increases the volatility of a fly spray. I don't think anyone would use a sufficient amount so that it acts as a fumigatant. Maybe somebody here can answer that. We know it is done.

Comments by Mr. Cossetta: Speaking about carbon tetrachloride as a fly spray, I found a few years ago some people that used that. They used that on account of the gas, distributing gas, and it brings down the insects quicker than any other. Whether they are killed or not, I don't know. That is the reason they used it. It is noninflammable and it brings down the insects quicker. That is one of the reasons why, I found out on experiments.

Question: Do you see any advantage or disadvantage by using pyrethrum powder with sodium fluoride?

Dr. Weed: Well, that is kind of a bad question to ask. We feel pyrethrum has a place in those combinations, and I would say that for the simple reason, whether or not it is true in your industry, as far as insecticide manufacturers are concerned, many of their sales, many of their bulk sales, are made on the basis of a demonstration. If you are going in to demonstrate a product such as a roach powder and you have a constituent in there which sets the bugs in motion, it probably has a psychological effect just as Dr. Roark mentioned the fact that speed of action of the pyrethrum fly spray has an advantageous psychological effect because it is fast. While we are not distributors of

fluorine compounds, nevertheless, we have taken the attitude when it comes to all around general satisfaction in a roach powder, for the German roach at least, probably there is nothing as generally satisfactory as your fluorine compound.

Question: What I meant is sodium fluoride mixed with pyrethrum. I have heard others say they lose their strength by mixing them. In my experience I have found that it is very satisfactory.

Dr. Weed: We have never had any criticism coming to us from that standpoint, that is, lessening of the efficiency of the fluoride or pyrethrum going into the mixture.

Mr. Cossetta: To make myself more clear, do you see from your laboratory tests, that there is any disadvantage while using them both together?

Dr. Weed: No.

Comments by Mr. Thompson: A moment ago they were discussing the use of carbon tetrachloride as a spray. I don't believe any carbon tetrachloride manufacturer will recommend the use of that material as a spray. The first reason is the vapors are so disagreeable, nobody would want to be subject to that fume any length of time, and the material evaporates so rapidly the insect is not exposed for any length of time sufficient to kill. Carbon tetrachloride is considered very toxic to the general run of insects.

Comments by Dr. Weed: There is one more thing I forgot to mention and that is these active principles that are in pyrethrum, which we are calling pyrethrum one and two today. Doctors Haller and LaForge say they are two compounds that are not volatile at ordinary temperatures of use. There have been so many experimental publications which say you should buy fresh pyrethrum because the active principle goes off. That is not a fact. These constituents are not reliable at ordinary room temperatures. There are some essential oils in the flowers which are volatile, but the toxic material in the flowers themselves is not.

Dr. Thos. E. Snyder

Question: You say, Doctor, that wood that has been impregnated with creosote will not be attacked?

Dr. Snyder: We have had records over the last fifty years of timbers impregnated with coal tar creosote. After a period of thirty years there was a small percentage, not a large percentage. For instance, we take ten thousand poles, after service of thirty years there will be some percentage of failure due to improper penetration, deterioration of the chemical, or some other cause, but this percentage will be rather small if the creosote is standard grade and the creosoting has been thoroughly done.

Question: The reason I ask, I know there are numerous termite operators who are continually pulling out wood that has been impregnated with creosote and it is just reeking with bugs, just full of them. Maybe it was a poor job of creosoting.

Dr. Snyder: Those were our service records. We are substantiated by the American Telegraph Company, large railway companies and other large users of wood. I recently had a visit from a forester from India who has been stationed there for twenty years. He said in their experience the only wood preserver that was at all successful was creosote. But as I say, over a period of fifty years, after a thirty-year period, say you have sixty thousand poles, in impregnating poles there are bound to be some poles not properly impregnated. In very severe conditions in some cases, there will be a small percentage of failures in a period of seventeen to thirty years, but we have records of impregnated timber in the ground over a period of fifty years.

Question: Dr. Snyder, you mean creosote tests. You have been using other chemicals in the Long Island test, is that right?

Dr. Snyder: That was not a test of wood preservatives; that was a soil test.

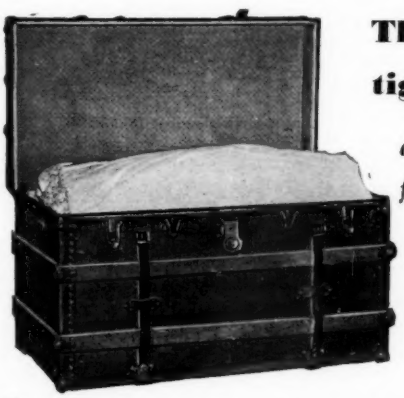
Question Do you have a record of the tests?

Dr. Snyder: We have a record of the tests but it is not available for publication as yet. It has only been running about two years, we think it should run about five years before we want to say anything about it.

Question: Dr. Snyder, in my experience in Louisiana I find say in a hundred homes treated with creosote, that there are termites all through it. Why is that?

Dr. Snyder: Was that timber impregnated with creosote?

Question: Yes, by the American Creosote Company. I can give you the name and address. But not only that, I have the date



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the building was built, the date the timber was bought, the date I saw it and the date I treated it.

Dr. Snyder: I should like to have definite records of their cases. I shall be glad to examine these buildings. Your records are contrary to ours.

Question: Doctor, according to your map it shows there are termites in Milwaukee; that is, you have included Wisconsin. How is it we don't get any complaints?

Dr. Snyder: I told you the further north you get in Wisconsin and Michigan the slimmer the termite population is. We have had very, very few records in Wisconsin, one or two cases in twenty years. The damage is very slight the further north you go.

Comment: We have been looking forward to getting a termite job, but we haven't as yet.

Question: Does that answer you gave also cover Northern New York, Central New York?

Dr. Snyder: Yes, it does. I come from Western New York myself. Termites are very, very rare up there.

Question: The extreme temperature, extreme cold, does that kill them?

Dr. Snyder: They go down below the frost level. We get them in temperate China, India and Japan. There are very, very cold temperatures, of course, in parts of China, parts of India are extremely cold, and they do occur there.

Question: In Central New York they have much hollow concrete block construction.

Question: These hollow blocks lie right on the ground.

Dr. Snyder: In Southern Virginia the old way of building a small house is to hire a colored man to plow a little trench in the ground and lay hollow concrete blocks right in the trench. These hollow blocks would have no footings under them whatsoever. When they got to the top of the foundation wall they would put the mud sill right on that block and then very often would not even tie the building to the foundation. If a very heavy wind came along it would blow away. That type of building was very susceptible to termites. They should have a concrete footing.

Question: The thing I was leading up to was how deep would you have to go in Northern New York?

Dr. Snyder: You usually don't have to go down below the footing.

Question: Dr. Snyder, in your address and also showing the slides, the test house was built in Panama in 1926. I believe you stated on your recent trip it was found to be satisfactory and that it is holding up. What particular method of treatment did you use in the construction of that building?

Dr. Snyder: That was coal tar creosote and zinc chloride.

Question: What particular method do you recommend of soil treatment, or timber treatment?

Dr. Snyder: We recommend coal tar creosote. These recommendations are all in our literature.

I have this literature here, but we may change these soil recommendations at any time. The R.C.A. Long Island tests and tests in Louisiana and Mississippi may cause us to change these soil recommendations at almost any time (Jokingly: We are still looking for that chemical which will take the knots out of wood!) We hope to get a soil poison which will be odorless and which will be non-toxic to people. We think we have a few very good leads in our recent tests. We have one chemical which builds up crystals very rapidly in the ground. We have another that has no odor to it and we have another which is extremely toxic. But at present our soil poison recommendations are entirely provisional and may be changed at any time.

Question: Tell us something of termites elsewhere.

Dr. Snyder: As you go further south in the tropics and as you go further south in the United States you find that the termite population and the number of species of termites increases greatly. But take in Panama, for instance, where we are doing our testing, there are over fifty species of termites in the Canal Zone. On Barro Colorado Island, Canal Zone, there are about forty-two, roughly. In a nearby location ninety miles down the coast of Panama, in the Gulf of San Blas, there is an area there where there are also some tests. Now, apparently, so far as we are able to detect there should be just as many termite species and just as abundant termite life ninety miles down the coast, but apparently there is not. The termite damage down there is very slight. There are just a very few species of termites there and the species that do occur there are not abundant.

Take Argentina and the whole region in the South American tropics, there are certain areas where there are no termites to speak of at all. Certain parts of Central and South America there are what you might call bare faunal islands where termites don't exist, or occur in very few numbers and are not very injurious. If we could explain that we might have something very important to help us to control termites.

In the same way in Washington, Baltimore and other cities, termites do considerable damage to buildings and all of a sudden they will disappear.

Now, as far as we know, we can't explain that. There is some reason why there are blank areas in the distribution of termites, and some reason why termites will stop when there is still abundant food supply and conditions apparently the same. These causes might not be detectable by man. We are still investigating them. We know termites have diseases which wipe them out, but usually you will find some traces, the heads and jaws of workers are left, but apparently in these cases I have mentioned they have just simply disappeared. They are not there, that is all. We can't explain these cases.

When I was teaching in the University of Chicago I never hesitated to say I did not know. I was teaching a group of graduate students and they made it very embarrassing for me at times.

Question: Doctor, in speaking of the shields, I notice you were very much in favor of metal shields. I would like to ask a couple of questions regarding them. What is the material you recommend for use in these metal shields?

Dr. Snyder: We recommend a metal that is as non-corroding as possible. I remember one time I was working in Honolulu. A former governor of Hawaii was there. I mentioned non-corroding metals. He said, "Young man, do you know there isn't any such thing?" Relatively speaking any non-corroding metal such as zinc, copper, corrugated iron. Don't use tin.

Question: Do you recommend metal shield on new construction?

Dr. Snyder: I do, but not necessarily on the outside of a building if the outside of the building can be watched. For instance, if your building is a frame building and you expect to go to Europe for two or three years and leave that in charge of a caretaker who may not be reliable, you ought to have a metal shield on the inside of the foundation of that building.

Question: You mentioned the use of microphones in detecting termite activity. What practical import has that?

Dr. Snyder: It has a very practical import, not particularly in this country but in the tropics. In 1928 a man employed by the British government in Ceylon came over to this country and wanted a fool-proof cheap microphone he could use on tea bushes. These tea bushes are in reality young trees. Dry wood termites were getting into them and causing a lot of trouble to the tea planters. He wanted to be able to detect these dry wood termites working in the trunks of these trees before they did much damage so he could put poison in the trunks of the trees and in that way get rid of them. If he waited until a lot of damage showed on the exterior very often the tree would break off or it would be very difficult to remedy it. So if he could get a field outfit, such as used by the Western Union or by the signal corps, which will detect the workings of termites in that wood, which could be used by cheap labor, it would really be worth while. But none of the laboratories so far had been able to manufacture a portable, cheap microphone with which to detect termites. We have had considerable work done by the Naval Research Bureau just outside of Washington, by Bell Telephone Laboratories and by the Pacific Telephone Company. They have developed outfits by which you can hear a termite walk, but these outfits are very heavy and very expensive. So far we have no stethoscopes or geoppones suitable for field use in case of termite control. I don't believe it would be practical to use anything we have as yet.

Question: In the matter of public health, is there any relation between termite infestation and public health?

Dr. Snyder: None whatever.

Question: Dr. Snyder, which of the two is the most resistant wood, not treated, cypress or redwood?

Dr. Snyder: We grade resistant woods as close grained Southern cypress, redwood and long leaf pine, containing resin. That is another thing this Indian forester and I discussed. They have in India several very important commercial trees. They have teak, sal and quite a few other termite resistant woods. But there is no commercial wood anywhere in the world which is immune.

Question: Due to the fact that the wood we are getting is so young and sappy, there is more damage.

Dr. Snyder: That has a lot to do with it.

Question: I would like to have you explain that.

Dr. Snyder: Will you repeat that question for the man in the back of the room?

Question: Seasoned heartwood lumber is more resistant to termites than the new growth of wood we are getting.

Dr. Snyder: Did you all get the answer? We don't recommened any wood as termite immune, any commercial wood from any-

where in the world, but there are commercial species in this country, close grained heartwood, cypress, redwood, long leaf pine are termite resistant. But we still think wood impregnated with chemical wood preservers is much better to use because we don't recommend any termite resistant woods for use in contact with soil. We only recommend them above the ground, whereas wood impregnated with coal tar can be used in the ground.

In this same place on Barro Colorado Island we are making tests of a large series of untreated, so-called termite resistant woods. These Panama tests include woods grown in the United States in all sections of the country, some African woods, Philippine woods, Central and South American woods, and we are getting a line on some of the more resistant species.

Incidentally you might be interested in this little exhibit I have up here. It shows a fairly large specimen of the tropical termite queens. This was brought over by this British friend of mine who was in New Orleans a few days ago. I would say it is about two and a half inches long. It is rather a small queen. We have some four inches long and nearly two inches in diameter, but our native queens in this country are only about three-quarters of an inch in length.

Question: How many instances have nests been found in your research? When they were found what was the minimum and maximum distance from the building and between nests, I mean the maximum queen nests.

Dr. Snyder: We have found so-called termite nests of subterranean species in this country in the soil underneath foundations, in the actual wood of the foundation. Sometimes the queen is in the wood of the building. That is because our termite species are mobile at all times. Our native species are mobile all the time. They go below the frost line in the winter. In the Southwest they go down in seasons of drouth, way down where there is moisture and they move around with favorable or unfavorable conditions. Our subterranean species, as I say, we have found them both in the timber of the building and underneath the timber in the ground. But it is very hard to find the so-called nests in cases of our nesting species.

Question: You have found them though?

Dr. Snyder: We have found them.

Question: Are they great distances from the building?

Dr. Snyder: No, usually right in the building or just underneath.

Incidentally what this newspaper article was deriding was the fact we studied these termites so intensely we knew they had these various types of queens. That is a very important point because in the early days in India and Africa they would hunt for the termite queen thinking in that manner they would destroy the colony. That is perfectly ridiculous. If they knew that when the king and queen are destroyed there are hundreds of others to take their place, what would be the use of hunting for the queen and king and trying to destroy them? That is the pure science the newspaper reporters don't understand, or don't want to understand, in order to make a good story.

I have just shown how pure research saved the textile industry of the South many thousands of dollars and also enables us to stop the foolish hunting for the queen of the colony. We know it doesn't do any good if they do find her because there are hundreds of others to take her place.

Question: Dr. Snyder, you say termites have been here a good many years before men?

Dr. Snyder: Yes sir.

Question: Are we to assume they have reached their saturation point in the Northern states or shall we look for increase in infestation?

Dr. Snyder: There will probably be slight increases in damage because, as I say, there is a disturbance of the balance of nature, and with the destruction of their natural homes, and the logs and stumps and woodland and sod, they are naturally going to attack buildings and it is up to us to build against them. There is a small local spread undoubtedly sometimes but this is not general. Due to poor construction there is greater damage because of the disturbances of the balance of nature but there is not any actual northward march of termites from the South. That is what our Bureau is for, to stop that. We inspect all ships that come in, all airplanes that come in. That is why we have this inspection of ships.

Incidentally I have here all of our available literature except the Sixth Progress Report on our wood preserver test, available for distribution. The Sixth Progress Report is nearly out of print and the Seventh Report is nearly ready to be printed. If anybody is interested I have all of this literature up here and it is available.

(Continued on Page 12)

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Dr. Snyder: How long would it take?

Question: To be infested to such a degree that the building would tumble.

Dr. Snyder: In continental United States we have very, very few cases of buildings that have actually collapsed due to termite infestation alone. In cases of well constructed buildings we haven't any. When you get decay, and subterranean termites, and poor construction and all working together, sometimes there is but they will take a very long time.

In Honolulu we have a record of a small frame building very heavily infested with termites that had been up for twenty years, and in Panama we have lots of buildings that have been up for five or six years.

Question: Why do I have trouble with finding termites infested in buildings that have concrete steps and concrete porches? Of course we have a new law in Louisiana that prevents it now, but you take on old buildings one hundred, one hundred twenty-five years old—we have a great many of those in New Orleans—just as quick as they put a concrete step aside that building, in two years, three years we have infestation in that house.

Dr. Snyder: There are three very good reasons why you have that trouble. The first is sometimes they put the concrete right on wooden forms and leave them there.

Reply question: I beg pardon, there is a law in the State of Louisiana that an architect or contractor does that he is fined one hundred dollars.

Dr. Snyder: It is done in the best of families just the same.

Another reason is they leave the forms on the outside of the concrete work.

And still a third reason is they fill in with dirt or wood debris underneath.

Question: Why is it that timber, that one hundred-year-old timber gets infested, in other parts of the house it is immune?

Dr. Snyder: We will have to examine that sometime together in person.

Question: You mentioned various resistant woods. Wouldn't it be a good idea to restore artificially and dry out wood and season them that have been in buildings for years, to restore them and materially assist in the repelling and prevention of termites from coming in?

Dr. Snyder: It would be rather difficult to put this resistant principle or extractive in wood already in place but we have experiments going on now with about thirty different pine oil compounds with which to impregnate wood before being placed in a building. In other words we are replacing the resistant content in sap wood.

Question: If it could be done it would be a very good idea?

Dr. Snyder: We will know more about that in a few years. These experiments have only been going for about five years. We really haven't gotten it under way yet. That is one of the lines of research we are engaged in.

Question: Cincinnati. I was wondering if the Doctor answered the question of this gentleman here about the wood, young wood and old wood?

Dr. Snyder: I don't believe I got to that, no. I meant to, I started to but got sidetracked. We find in investigating old buildings, the colonial buildings at Williamsburg, Va., Lee's mansion, Mt. Vernon, and other colonial buildings that termites have attacked these buildings over periods of over a hundred years. They have attacked some of these hand-hewn timbers. Of course, they have done some damage and stopped, maybe fifty years later they came and attacked the wood again. But it was a very fine grade of heartwood stock, a very hard wood such as your heavy long leaf pine timber, and timber of that kind is much more resistant to termites than sappy cheaper timber. Lots of the second growth timber we are getting now is more liable to attack by termites than the earlier heartwood timber. We specify to use the best grade of timber possible. We are trying to get lumber companies to grade timber. The very resistant grade of long leaf pine should be trade-marked to distinguish it from the cheaper pine wood.

I am sorry I did not answer that question before.

Question: Doctor, I believe in your talk you mentioned the workers necessarily fed the reproductive adults.

Dr. Snyder: Yes.

Question: After you have a swarm of them and the adults are free in the colony, what are they living on until they have their own offspring?

Dr. Snyder: I should have mentioned that the ant, for instance, has what is called a nuptial flight. They fly up in the air. The male and female mate up in the air. The male immediately dies and then the queen carpenter ant burrows in wood and lives there for six months without taking any food whatsoever. And after that the brood, first brood of workers raised is usually very small. Then they feed her and enlarge the colony.

The young male and female termites have a dispersal flight in the air. It isn't a nuptial flight. They lose their wings and only pair after they get to the ground. They feed themselves until the first brood of workers is raised; they eat wood. After that they are fed by the workers. I did not make that clear.

Question: Do you approve or disapprove of what is commonly referred to as spot treatment where only a small section of the basement is infested, or do you unqualifiedly recommend the entire basement be treated?

Dr. Snyder: Our recommendations for the control of termites are based entirely on structural changes. Where it is impracticable we recommend soil poisoning; where the damage is localized and the people haven't the money to do a complete job, we recommend the treatment localized.

Question: You mentioned in a poor foundation wall, poor concrete, termites can go through it physically and chemically.

Dr. Snyder: We were talking about mortar, mortar between the masonry units.

Question: What did you mean by chemically?

Dr. Snyder: They have a secretion which acts on certain mortars. They also penetrate physically and disintegrate just the same as the wasp can. Termites will do the same thing.

Question: The secretion loosens particles?

Dr. Snyder: This is a physical action that we are talking about. There are both chemical and physical actions, one way is dissolving and the other is this disintegration.

Question: The pictures you had of these queens, were they all subterranean termites?

Dr. Snyder: They were all subterranean.

Question: There are those three different types of queens?

Dr. Snyder: And more.

Question: All were the subterranean type?

Dr. Snyder: All of one species, and intermediate between all of those types as many as five different queens in a single species. There are three standard types: the winged, the short wing-pad form and then some with no wing-pads at all. Intergrading between those and intermediate all the way up.

We have a fine series of intergrading subterranean termite queens in the Solomon Islands in the South Pacific Ocean. They have queens ranging all the way from forms with absolutely no traces of wings on at all, up to the long wing-pad forms and the short stubs, an intergrading series all the way up.

Question: Doctor, the railway and telegraph companies have been using chemical treatments for their railway ties and telegraph posts for years. What particular method do they apply?

Dr. Snyder: Practically all of the large telephone, telegraph and electric light companies and railroads use the pressure creosote treatment.

Question: Do they use a salt treatment, a salt preservative?

Dr. Snyder: In the case of railroad ties, some of the railroads where there is not much rainfall use a salt treatment, but these salt treatments are not as effective as the coal tar creosote. In the case of ties where there is a heavy rock ballast and they are not actually in the ground, they have used salt treatments and a combination of creosote and salt. Incidentally in railroad ties there is so much vibration in the ties the termites do not attack the ties.

Question: Dr. Snyder, you made a statement that you think that part treatment of a building is, well, it is all right to do. Now, here is the experience of the State of Louisiana, the Louisiana Association of Exterminators and Fumigators, we find in doing work the last seven years, part treatment of a building is always, you will have trouble within three to five months. Why do a part treatment?

Dr. Snyder: I don't think you understood my answer. I said, where a family was so poor they couldn't afford an entire treatment and had localized damage, it might be all right to try it.

Question: Why does the State of Louisiana refuse to issue a license to a person, or to even recognize a concern that does in any way, shape or form a part treatment?

Dr. Snyder: Because we wouldn't recommend it in general either, probably.

Question: Doctor, you mentioned termites cannot penetrate concrete. I agree with you, but I have seen them come

through and my explanation has been there has been a fissure all the way through. At the start they just had a place through which they can make their mud tunnels, is that correct?

Dr. Snyder: As far as I know there has been no penetration of concrete by termites that we can get definite records on where there was not something wrong. For instance there might be just a little straw in the concrete, or a hollow, or something like that.

Question: I ran across a job in Chicago where together with the termites I found a pellet which looked like a death watch beetle. I wonder what that was?

Dr. Snyder: Where was this, in Chicago?

Question: In Chicago.

Dr. Snyder: We have in this country powder post beetles, some of them have been carried all over the world. Our species have been carried to Australia. European species have been carried to this country. Pellets in eaten wood are of various types and shapes. I have just written a little paper on that.

Question: This was about three-eighths of an inch long and they are black and hollow. Pellets of this death watch beetle were cylindrical. They work in conjunction with termites?

Dr. Snyder: Not necessarily; they are wood borers.

Question: I am not going to ask the next question. I am going to voice a little comment and ask about creosoting telegraph poles. I happen to have some very definite information from a very large company we are associated with. They take coal tar creosote and dilute it with a hydrocarbon base similar to preparations used in so-called termite preparations, termite destroying preparations. By surface treating they are only impregnated in spots but they drill holes and shoot some of it in. They are pitted and allowed to stay in these pits to get a deeper penetration and give more lasting preservation properties to the pole.

Dr. Snyder: Of course there are three or four methods of impregnating timber. The best treatment is the cylinder pressure. The ties are put in this steel cylinder and the pressure exerted, leaving all the creosote in there. Then under the Rueping (empty cell) process they use this same treatment but draw some of the creosote out. Those are both steel cylinder pressure methods.

The next treatment is the open tank treatment or natural vacuum treatment. They put the timber in a hot bath of creosote and let it cool. The creosote is sucked in, a natural vacuum. This is not as effective as pressure impregnation.

Then there is still a third treatment, a compromise treatment between the open tank treatment and the dipping treatment.

Then, of course, there is the brushing treatment.

Question: Don't you think the penetration of the creosote cancels the effectiveness of the preservation of the other, the deeper the penetration?

Dr. Snyder: The deeper, the more thorough the penetration the better the treatment. If you leave a little strip of inner bark on one little section of the poles the chemical will not go through and you have to get uniform penetration throughout.

Question: The termite solution in the hydrocarbon cases are so entirely diluted in surface penetration and haphazard internal impregnation.

Dr. Snyder: That is the reason they really should trademark the treatment. Some companies do that, advertise trademark creosoted timber and we know it under that trademark.

Question: Don't you think it is a physical impossibility with modern methods we use in doing termite work, nothing in the world will give you the same penetration as the vacuum process or the process of dipping.

Dr. Snyder: We think the pressure process is the best treatment. But for continental United States we see no reason why all the woodwork in the building should be treated. With proper construction of the foundation it is not necessary. Incidentally, it will increase the cost about ten per cent to impregnate all the wood of a building.

Conrad C. Johnson

Question: In your statement about putting Chlorpicrin on the rug, I beg to differ and I would very much advise anybody against doing it if they do not want to have damage for refinishing the floor or cleaning the furniture due to spots. If you scatter Chlorpicrin wherever it will hit on the varnish or polished floor it will leave a spot. If you spray it on furniture or rugs it will take that much more time to evaporate to give it off and it will positively leave a spot the same as you would using plain, common, ordinary naphtha. And sometimes the exterminators find when the man sprays ordinary surface spray around a davenport, and so on, it will leave a spot,

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the woman says, "You dirtied the davenport and you have to clean it." Anyone who has used Chlorpicrin will agree with me and anyone who wants to use it should take care because of that.

Mr. Johnson: I am very glad you brought that out. I apparently did not make myself clear. If it does get on varnish and shellac we do get a stain. Our experience has been it is the nature of a water mark and can usually be taken out in the same way as a water mark. On dusty rugs and furniture coverings, any liquid will cause dust rings, the removal of which is generally dependent on the nature of the dust.

Thanks for bringing that up. I wouldn't have anyone take a chemical and promiscuously throw it about the house. It is unnecessary, as well as contrary to all our suggestions.

Question: You mentioned Chlorpicrin in a hole outside, that the smell stays there for three or four months. Now, how is it in a house when you put it on a carpet or something the smell doesn't stay so very long?

Mr. Johnson: In your carpet you have fairly good ventilation conditions. Your carpets acts like a wicking to disperse the gas quickly. On the other hand, in burrows inside a structure we have conditions of undisturbed air, dampness, and low temperature, all of which militate against aeration. With dampness the Chlorpicrin absorbs and will stay for a considerable time under low temperature conditions.

Question: We have had a comparison of the length of time it takes to air a house with other gases. How long does it take to air a house with this gas, and also due to the heaviness of it wouldn't you be apt to have the odor around the house a month or so? If it gets in burrows and stays there wouldn't it get in cracks and cupboards around the house and stay longer?

Mr. Johnson: That is a fair question and as with any other fumigant we can't give a flat answer. I will give one of the most favorable conditions I have seen, which was in my own home about two or three years ago. On a breezy day they opened up at five o'clock and at eight o'clock I moved in with my family, including a child less than two years old. With our windows open we experienced no discomfort. However, sitting in the living room that evening, as we plumped down into the davenport in a few minutes there would be a trace of tears. In this case we went into the house immediately on account of very favorable airing conditions.

I would say on the average a ventilation period of 12 hours is ample and sufficient, after which there might be occasional blinking of the eyes in closed rooms for a day or so. But in every case we would have a warning in case of too high concentration or pocketing. Long before it gets to the danger period Chlorpicrin will make it impossible for the people to remain.

Putting a comparatively large amount of liquid into undisturbed damp burrows creates a condition very different from the diffusion of gas into cupboard cracks. In the latter, no liquid contacts solid surfaces and the amount of Chlorpicrin is infinitesimal compared to rat burrows, so that opening cupboard and closet doors usually affords complete airing in a short time.

Question: Would you recommend heating of the place as with other gases?

Mr. Johnson: Yes.

Question: That would help?

Mr. Johnson: Yes.

Question: I would like to ask you about using Chlorpicrin in rodent burrows leading from basements of say, stores. Would using it in small amounts perhaps in half a dozen different openings cause any discomfort to anybody on the floor above, if this work was being done in the basement?

Mr. Johnson: That is naturally a difficult question to answer with finality on account of the construction details. When you have used these very small quantities for internal work in the burrow, the probability is there will be no discomfort up there, unless carried by an up-draft through the walls, but naturally there would be ample warning.

Question: Would it be necessary to use a gas mask while working with such small doses?

Mr. Johnson: We have done a lot of rodent work where we have simply put it down a burrow from a bottle, without a gas mask.

Question: Supposing you are using sodium cyanide fumigation, could you mix Chlorpicrin with it as a warning signal, say put in a pound or half pound, something like that ?

Mr. Johnson: I believe an application under those circumstances would have to be made by putting the Chlorpicrin up first, followed by application of sodium cyanide with a mask that will also remove Chlorpicrin. I do not know of any method of incorporating the Chlorpicrin with calcium cyanide.

Question: Would it mix? Would it have any interference with the other gas?

Comments by Mr. Meyer: I think I can answer that for you because we have done it in an even more simple manner than that. As we dump our cyanide into the crocks, we pour in Chlorpicrin at the same time. The heat in the crock volatilize the Chlorpicrin, you get plenty of warning gas.

Comments by Mr. Johnson: The concentration is too low to be toxic. I think we can sum the matter of diffusion up by having you men refer back to your high school physics. A true gas diffuses equally in all directions. And going into pressures, any number of gases can exist in a given space and have complete diffusion and equal diffusion in that space barring air current. So that you can put up your Cyanide and have your equal diffusion (barring air currents) and you can put up a small quantity of Chlorpicrin and have equally equal diffusion.

Rats Trapped by Snake

Thomaston, Conn.—Dr. Oliver, CCC camp physician, found Camp Roberts overrun with rats, which carefully avoided traps he set for them. Inspired, he forced a captured blacksnake into one of the numerous rat holes and the rodents fled into the traps.

Crickets' Diet Proves Costly

Washington—It's sometimes considered bad luck to kill a cricket on the hearth, but the Department of Agriculture said it's worse luck not to.

Crickets are now moving into houses to keep warm in the winter, and the department warned that they like nothing better than a diet of fine linens and fleecy sweaters. They specialize in eating soiled spots out of tablecloths.

One woman here kept two crickets for pets last winter. The two turned into 40, with highly unpleasant results.

Calcium Cyanide Dust in Ship Fumigation

(Continued from page 7)

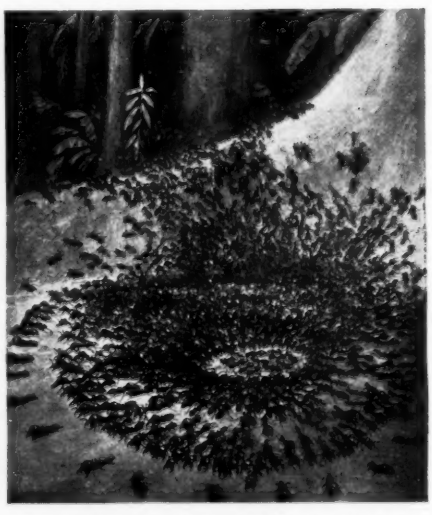
can be entirely obviated if the operator wears a gas mask. In actual practice during experiments to test this material, no such accident has occurred, and no fatalities from such accidents are reported in the literature despite the fact that this type of dust pump is extensively used in destroying burrowing rodents on farms throughout the United States.

Because the absolute amounts of dust injected into harborages are small, the dangers from gas being held in these harborages and later escaping into the ships' holds after they have been cleared is practically nil. This is apparent when one considers that the harborage is of only a few cubic feet capacity while the hold is from 30,000 to 100,000 cubic feet in capacity. An amount that may produce a high concentration inside a 4 cubic foot pipe casing becomes hardly more than a smell when liberated in the open hold.

Fumigating Holds

Calcium cyanide dust may be readily utilized to fumigate ships' holds by blowing it into them with compressed air or some type of centrifugal blower. A vacuum cleaner with the bag replaced by a delivery hose does very well; it can be utilized also in the superstructure, but there presents the disadvantage that the fine dust, universally distributed, presents a subsequent cleaning problem.

The Calcyanide Co. also offers an apparatus wherein the HCN is extracted by air in a large bag and the gas-laden air, free from dust, is delivered through a hose, which obviates the cleaning problem.



A GENERAL ASSEMBLY OF ANTS

This "big palaver," as the natives termed it, was seen by the author in the Gold Coast Colony. A small open space in the center was encircled by rings of ants, all facing outwards with their nippers held up. They appeared to be guarding the center, where there were a few Ants of a lighter color and evidently of greater importance. The above picture showing an unusual and rare assembly of Ants was sent in by Mr. Towlen of Calcyanide Company.

Pied Pipers of Yesterday and Today

WE HAVE all heard the immortal tale of the **Pied Piper of Hamelin.** It tells of the town children who were lured to the mountain side. There, according to the quasi-historical accounts, 136 of them perished. There, according to the Walt Disney version, they were all made very happy in a fairyland of candy sticks and wooden toys.

That's the end of the story. But the beginning is more important. There was, our readers will recall, a great depression in the town of Hamelin due to the failure of the harvest. The people were much bothered by rats. Apparently they had not worried much about them until famine hit the town. But when there was not enough food to go around, they were worried and decided something ought to be done to exterminate their rodent enemies.

No doubt, they had many long debates. Any number of brilliant plans for getting rid of the rats must have been suggested. The man who finally got the job was the well-known Pied Piper. He offered them a simple way to solve their problems—a panacea so to speak. It involved no hard work and no very great expense. All he had to do, he told them, was to pipe a little tune and the rats would disappear.

They would not have to clean their houses. They would not have to pass sanitary regulations nor set rat traps. All was to be done for them.

The Pied Piper got the contract from the people. History does not tell us who the Pied Piper was; whether he was a radio economist in disguise, or a Bible institute preacher, or a chairman of a price spreads committee, or perhaps just a plain, ordinary, everyday politician or university professor.

The legend records that the Pied Piper did play his tune and did remove the rats. At that point the whole story becomes a fairy tale—albeit an interesting one.

The Pied Piper was a quack and a fakir. He offered a substitute for good housekeeping when there could be no substitute outside of fairyland.

There are plenty of modern Pied Pipers who are trying to divert our attention from sound national housekeeping methods with promises of a perfect world to be attained through musical economics.—Financial Post, Toronto, Canada.

Ungrateful Rat Bites Boy, 8, Who Saved Its Life

Robert Browne, 8 years old, who has been taught to be kind to dumb animals, found a rat frozen into a helpless state near his home and took it inside to thaw it out.

The thawing, which was accomplished in a pasteboard box, was a success. But when Robert looked in to see the results the rat, which had not been taught to be kind to human beings, bit him on the lip.

Employees of the board of health, informed of the occurrence, requested the Chicago Lawn police to kill the rat and send in the body for an examination, fears being expressed that it might be a carrier of disease. Policemen Thomas Keogh and Thomas Walsh punched holes in the board box and held it against the exhaust pipe of their car until the rat was dead.

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The California State Convention

THE convention at Fresno, February 7-8 was more than just a get-together affair for social purposes. Several speakers of note helped to make the program very helpful and instructive.

Committee meetings were held on the evening before the convention and much of the detail that would ordinarily have developed on the convention assembly floor was eliminated.

Mr. Blen Slater gave a brief, concise picture of the work of the State Structural Pest Control Board, outlining what had been accomplished and plans for further work.

M. G. Jorgenson told briefly the work that was being done by the board in the field.

Dr. Alvin J. Cox, Chief of the Division of Chemistry, State Department of Agriculture, started off with a talk about the relation of his division to the activities of the exterminator and surprised and pleased all listeners with a very comprehensive talk on the termite as observed by him in the island possessions of the United States.

D. M. Machie, Supervisor of Entomology for the State of California, gave a very interesting talk on "Commercial Pest Control and Its Relationship to Governmental Pest Control." He definitely put the exterminators at ease as to interference from the state where the commercial operator's license and right was concerned and displayed a spirit of helpfulness that was very heartening.

Professor Emmanuel E. Fritz, Department of Forestry, College of Agriculture, University of California, delivered the most practical talk on "Wood-Destroying Fungus" that has been delivered so far to an assembled group of professional control operators, showing definitely that he is an authority on the subject discussed by him.

Dr. Stanley Bailey, University of California, Division of Entomology and Parasitology, gave a talk on general entomological subjects that covered a wide field and touched on several points that affected the exterminator very closely.

"Jess" Miller as Regional Vice-President of the National Association, told of the work of the National Association and the close affiliation with the local groups represented at the gathering.

Wallace B. Tanner, chairman of the program committee, called the convention to order and introduced the Mayor of the city of Fresno, Z. S. Leymel. This was followed by the opening address of Chairman Wilbur Smith.

Perhaps one of the most significant pieces of business accomplished at the convention was the welding of all representative groups of the State into a California Association, which becomes a subsidiary of the National Association. The plan adopted permits of local groups having their own officers to deal with local problems but ties in with the State Association. In this manner even the smallest groups are in reality members of the National Association and will have a voice in all matters of policy. This was accomplished with the least friction among possible factional groups and speaks well for the cooperation displayed by all parts of the state.

The following officers were elected as State Association officers:

Officers and Directors of California Exterminators and Fumigators Association

President:
Wilbur F. Smith, National Director, South, The Alderman Company, 1811 East Walnut Street, Pasadena, Calif.

First Vice-President:
Wallace B. Tanner, Los Angeles District, California Termite Control, 6063 Sunset Boulevard, Hollywood, Calif.

Second Vice-President:
George A. Rader, National Director, North, 1219 Oxford Street, Berkley, Calif.

Secretary-Treasurer:
Elmer A. Roberts, San Francisco District, Roberts Company, 1105 Capuchino Street, Burlingame, Calif.

Directors:
Larry F. Burror, East Bay District, Burror's Termite and Building Maintenance Co., 4400 Broadway, Oakland, Calif.
J. W. Gates, North San Joaquin and Sacramento Vallies District, City Service Co., 211 Dorris Place, Stockton, Calif.
R. B. Carl, Fresno and Bakersfield District, Carl Termite Control Co., 311 Mattei Building, Fresno, Calif.
C. W. Mollard, Santa Barbara District, Santa Barbara Termite and Pest Control, 504 North Milpas Street, Santa Barbara, Calif.
Robert G. Muench, San Diego District, The Lloyd Company, 816 First National Building, San Diego, Calif.

Banquet—Second Annual Convention of Exterminators and Fumigators of California held at California Hotel, Fresno, February 8, 1936

Local Organization News

California Organized

ONE does not often realize the size of California when it comes to thinking in terms of having an organization that will adequately care for the interests of the firms in the exterminating and fumigating industry, or as the firms more properly like to think of the industry by referring to it as the "PEST CONTROL" profession. (Editor's note—This thought is something to think about in that gradually advertising might be changed to such classification and thus do away with the duplications that appear in telephone directories, etc.) California is 800 miles long and if one were to glance at the map of the United States, it would be noticed that San Francisco is about the same latitude as New York City while San Diego is opposite or even a little below Savannah, Georgia. It would be difficult for the men to meet once a month and hence there seems the need for local groups within the state. Encouraging, however, is the affiliation that exists among the local groups in California with the State Association. The latter Association in turn is giving its cooperation to the National Association, and yet each Association is an entity when it comes to program and policies as such matters more directly affect the conduct of business in the specific area covered.

Possibly the outstanding local groups in California are "The Exterminators and Fumigators Association of Southern California" which covers the area about Los Angeles, and in the Northern section there is "The Structural Pest Control of Northern California" with headquarters in Berkeley.

The recent convention held at Fresno gave direct proof of the spirit of cooperation that exists. Many will be interested to know about the officers:

State Representatives on National Association Board of Directors:

J. M. Miller, Regional Vice-President, 1631 North LaBrea Avenue, Hollywood, Calif.

W. F. Smith, Director, Pasadena, Calif.

M. G. Jorgenson, Director, Los Angeles, Calif.

George A. Rader, Director, Berkeley, Calif.

State Association "Exterminators and Fumigators Association of California":

W. F. Smith, President, 1811 East Walnut Street, Pasadena, Calif.

W. B. Tanner, First Vice-President, Hollywood, Calif. (Covers Los Angeles, Orange, Riverside and San Bernardino counties.)

G. A. Rader, Second Vice-President, Berkeley, Calif. (Covers Northern area.)

E. A. Roberts, Secretary-Treasurer, 1105 Capuchino Avenue, Burlingame, Calif. (Covers San Francisco and counties on northern and southern peninsulas.)

R. B. Carl, Director, Fresno, Calif. (Covers Fresno and Bakersfield, Southern San Joaquin Valley.)

Larry Burror, Director, Oakland, Calif. (Covers East San Francisco and Bay District.)

J. W. Gates, Director, Stockton, Calif. (Covers North San Joaquin and Sacramento Vallies.)

C. W. Mollard, Director, Santa Barbara, Calif. (Covers Santa Barbara and Ventura counties.)

G. R. Muench, Director Pending, San Diego, Calif. (Covers San Diego District—San Diego and Imperial counties.)

Exterminators and Fumigators of Southern California:

W. F. Smith, President, 1811 East Walnut Street, Pasadena, Calif.

R. W. Hunt, First Vice-President, Whittier, Calif.

C. W. Thoman, Second Vice-President, Whittier, Calif.

R. B. Loibl, Jr., Director, Los Angeles, Calif.

Ray Lovejoy, Director, Los Angeles, Calif.

R. A. Woodward, Treasurer, Los Angeles, Calif.

The Structural Pest Control of Northern California:

George A. Rader, President, 1219 Oxford Street, Berkeley, Calif.

Wayne K. Davis, Secretary, 2120 Delaware Street, Berkeley, Calif.

St. Louis Notes

Tom Raley is as busy as a flea in a dog fight. He is scurrying to and fro arranging a booth in the Municipal Auditorium for the "St. Louis on Parade Week."

Bill Martin says the Ground Hog did not have anything on him as he hibernated

(Continued on page 18)

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as well as the Ground Hog, was away from home but once during the five or six weeks of cold weather.

We hear Mr. W. J. Hale is getting the fishing fever already. Won't be long now Bill, hope to go with you some week-end.

Haven't heard from Roy Allison of late. Will someone phone him of the change in temperature so he will again venture outside.

Press that middle valve down, the music goes round and round, Oh, Oh, Oh, Oh, Oh, and we will all come out in Cleveland. Who said convention this early?

We understand Bill Martin refused to lend Bromfield his dog to go rabbit hunting. His reason was he could not understand why anyone wanted to shoot a poor defenceless rabbit. Bromfield said he wanted to satisfy himself whether the dog was all Mr. Martin says it is. Bromfield must have heard the same story about the dog told to Al Cossetta, Wm. Buettner, Tom Raley and several others during 1934.

National Association Notices

Membership: The steady growth of the Association is being reflected in the QUALITY firms availing themselves of definite advantages of membership. Recently Regional Vice-President J. M. Miller forwarded 19 new members.

List of Books and Publications: Request has been made for such list and as soon as this is compiled it will be made a part of the regular membership communications.

Communication No. 39: Covers routine business of the Association, sent February 26 to the officers and directors.

Communication No. 40: This was a general industry letter sent to all firms throughout the country. It was mailed February 29.

Communication No. 41: Regular membership communication covering matters of interest for the members and sent March 6.

Communication No. 42: Membership communication covering matters of interest to be sent during the latter part of March.

Cleveland, October 26-27-28: By now you must have in mind these dates for the Annual Convention. Let nothing interfere in keeping you from attending.

Rodent Control Campaigns: The Works Progress Administrators of each state should be contacted in the event of any campaigns of this nature. If you do not know the Administrator's name for your state, the secretary will be pleased to supply the complete address.

Picked Up From Here and There

Announcement has been made of the wedding on January 30 at Chicago, Ill., of Miss Muriel Curtis to Harold E. Jennings. Both are graduates of the University of Chicago. Mr. Jennings is the owner of Smithereen Company. After a pleasant trip to the West Indies, Mr. and Mrs. Jennings spent a few days in New York City visiting with several friends and his brother, who is associated with the Guarantee Exterminating Co.

John Powell of John Powell & Company was recently found in an enthusiastic frame of mind suggesting a possibility for the industry this spring and summer. Yes, sir, Mr. Powell, let the April issue front cover tell us something of this.

E. L. Bruce & Company recently held a convention of its Terminix affiliated.

Our sympathy is extended to Mr. and Mrs. H. K. Steckel of Columbus, Ohio, on the loss of Mrs. Steckel's mother.

H. F. Leopold, Jr., of Shure-Deth Exterminating Company of Chicago, Ill., has recently reported moving to larger offices and is now located at 541 W. Randolph Street.

Word comes from Cortland, N. Y., that E. W. Benton of the Benton Service Co. is enjoying the California sunshine. R. L. Alderman and others will be happy to say hello to Mr. Benton, as we understand he is stopping long enough to visit with a few firms on the west coast.

B. U. Baker of the Exterminating Engineers; Inc., of Chicago was last heard from on his way to Florida. "Ben" is a hard worker and active in the work of the National Association of Exterminators and Fumigators.

It HAPPENED in the Western Division

You never can tell. A year ago at a week-end meeting of the directors a poker game was started. No one could ever tell what really happened at that party. Now the wives have taken it up. Rumors are continually coming in about a card game held during a recent meeting of the Association. Full particulars may (notice I said **may**) be had from Mrs. Jorgenson, Mrs. Alderman, Mrs. Smith or Miss Emmerick.

Reports still come in about the Fresno Convention. Some things seem to be off the record. What is all this we hear about the post convention meeting at Omar's?

These wonderful Spring days are making us think, but not about business. We hope that Carl Strom will have that boat in condition. We have not forgot about that trip to the Channel Islands, Carl.

Twenty-seven applications for license have been passed on by the California State Structural Pest Board since examinations were held in San Francisco and Los Angeles last month.

The Western Exterminating Co., Los Angeles, are constructing a new building that will serve as both warehouse and office housing. The new address will be 3644 Beverly Boulevard. The new structure will be really quite an imposing one running through the entire block and facing on both Westmoreland and Beverly. The Western Ex. expect to occupy their new home about the middle of March.

Robert Loibl, Sr., and "Bob," Jr., are taking a vacation about the first of March when they intend to go to Old Mexico, down Ensenada way where they will fish for abalones. The Loibls, father and son, are the genial proprietors of the Ant-B-Gon Company of Los Angeles.

Business Opportunities

(Classified)

RATES — For individuals seeking employment, 5c per word, minimum $1.00. All others 10c per word, minimum $2.00. All advertisements must be in the hands of the publishers seven days before publication date and must be accompanied by cash or money order for payment in full. The publishers are not responsible for any false or misleading advertisements.

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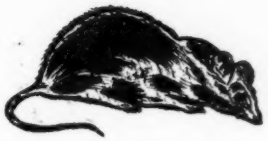
Write for Prices and Information

THE EXTERMINATORS LOG, Cut Dept.
512 East 14th St. Kansas City, Mo.



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